

## Selection & Specification Data

### Generic Type General Properties

Flake glass polyester  
A spray applied system that contains many compacted overlapping layers of glass flake which makes the film very resistant to penetration in aggressive environment.

- Excellent resistance to hypochlorites and free chlorine
- Excellent long term protection
- Excellent abrasion and impact resistance
- Excellent acid resistance

### Recommended Uses

As a tank lining for a variety of acids, hypochlorites and free chlorine. Properties such as retention of adhesion and impact resistance allow its use in lining large steel tanks. Examples of uses in chemical processing plants are the lining of filter tanks, brine tanks, vacuum dryers, settling tanks, tank trailers, etc. Other uses include tank bottoms in the petroleum industry, pulpers and storage tanks in paper mills, ship hulls and rudders and splash zone areas on offshore structures.

### Not recommend For

Immersion service in alkalis or aromatic solvents.  
Application on concrete or other cementitious surfaces.

### Color

Off-white

## Typical Chemical Resistance

Exposure	Immersion	Splash/Spill	Fumes
Acids (Mineral)	Excellent	Excellent	Excellent
Acids (Organic)	Excellent	Excellent	Excellent
Alkalis	Fair	Good	Good
Solvents	Poor	Fair	Good
Salt Water	Excellent	Excellent	Excellent
Water	Excellent	Excellent	Excellent

### Temperature Resistance: (Dry)\*

Continuous: 200°F (93°C)

Non-Continuous: 250°F (121°C)

\*Immersion temperature resistance depends on exposure. Consult Carboline Technical Service for specific recommendations. Tanks operating above 140°F (60°C) must be insulated.

**Substrates:** Properly prepared bare steel only.

**Topcoat:** None recommended

## Selection & Specification Data

### Solids Content

By Volume: 98% ± 2%

### Dry Film Thickness

Two coats at 20 mils per coat (500 microns) per coat.

### Solids Content

By Volume: 98% ± 2%

Theoretical Coverage  
Rate per Gallon\*

1572 mil sq. ft. (39 sq.m/l at 25 microns)  
78sq. ft at 20 mils (1.9 sq. m/l at 1mm)

## Selection & Specification Data (cont.)

### VOC Values\*

As supplied: 2.31 lbs/gal (278 g/l)  
Per Actual Gallon: 0.0 lbs/gal

\*Note: Since a volatile monomer is used, losses during field application are affected by the following:

1. Styrene monomer evaporation during application and cure may result in up to a 30% lower coverage rate compared to theoretical coverage.
2. Application of the product when material and surface temperature are above normal will result in greater monomer loss, causing lower coverage rates.
3. With recommended blast profile, up to 10% additional material will be required to fill in the blast profile.
4. Due to these factors and the glass flake in the Carboglas 1601 SG, measurement of the wet film thickness is difficult. Film thickness reading should be made after the product has dried to touch, using a properly calibrated magnetic gauge.
5. Material losses during mixing and spray application should be taken into consideration when estimating job requirements. These losses are in addition to the factors affecting coverage referenced above.
6. Practical coverage rates of 20 to 30 ft<sup>2</sup> per gallon (0.49 to 0.74m<sup>2</sup> per liter) have been experienced with this material for a two coat application, depending upon the roughness and configuration of the surface and application conditions.

## Substrates & Surface Preparation

### General

Remove all dirt, dust, oil and all other contaminants from the surface to be coated with Thinner #2 or Surface Cleaner #3 (Refer to Surface Cleaner #3 Instructions) in accordance with SSPC-SP1.

### Steel

Immersion Service: Abrasive blast to a White Metal Finish in accordance with SSPC-SP5 and obtain a 4-5 mil (100-125 micron) min. blast profile.

Non-Immersion: Abrasive blast to a White Metal Finish in accordance with SSPC-SP10 and obtain a 4-5 mil (100-125 micron) min. blast profile.

### Concrete

Not recommended.

## Mixing and Thinning

Power mix Carboglas 1601 SG Part A separately, then add the Carboglas 1601 Catalyst and power mix in the following proportions:

### 5 Gallon Kit

### Part A:

5 Gal

### Carboglas 1601 Catalyst:

0.11 Gal (14 fl. oz.) (plastic quart)

Additive #47 may be used up to 6 ounces per gallon if necessary to reduce viscosity and improve application characteristics.

**NOTE:** Use of thinners other than those supplied or approved by Carboline may adversely affect product performance and void product warranty, whether express or implied.

### Pot Life

The following chart shows typical pot life vs. temperature and catalysts levels. The times will vary due to job site conditions and/or volume mass of mixed material.\* Pot life ends when coating starts to thicken.

Catalyst Level	65F (18C)**	75F (24C)**	90F (32C)**	110F (43C)**
Std. 2.8 oz/gal	2 hours	1.5 hours	45 min.	20 min.
+50% 4.2 oz/gal	1.5 hours	1 hour	30 min.	10 min.
+100% 5.6 oz/gal	1 hour	30 min.	15 min.	5 min.

\* Times will vary +/- 10%

\*\* Material Temperature

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# Carboglas 1601 SG

## Application Equipment

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

General Guidelines:

**Spray Application (General)** The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

**Conventional Spray** Bottom outlet pressure pot with dual regulators, 1/2" I.D. minimum nylon lined material hose, 25' maximum material hose length, .088" to .110" I.D. fluid tip and appropriate air cap.

**Airless Spray** Pump Ratio: 45:1 (min.)\*  
GPM Output: 3.0 (min.)  
Material Hose: 1/2" I.D. (min.)  
Tip Size: .035-.041" (easy clean type)  
Output PSI: 2200-2500  
Filter Size: Not recommended.  
\*Teflon packings are recommended and available from the pump manufacturer.

**Brush & Roller (General)** Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C).

**Brush/Roller** Not recommended.

## Cleanup & Safety

**Cleanup** Use Thinner #2 or Toluol. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

**Safety** Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.

**Ventilation** When used in enclosed areas and thinned, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.

**Caution** This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

**Repair Procedure** In areas where the coating has been damaged or removed to the substrate, the following procedure must be used.

1. Clean and roughen substrate in the manner specified for the original application, or in cases where the substrate has not been exposed, remove the loose or damaged material to sound, tightly adhered material.
2. Grind to featheredge existing, sound material, remove the loose or damaged material to sound, tightly adhered material.
3. Solvent wipe edges and any overlap areas with xylol and apply repair material in one or two coats as specified.

## Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	65°-80°F (18°-27°C)	65°-80°F (18°-27°C)	65°-80°F (18°-27°C)	30-80%
Minimum	55°F (10°C)	55°F (13°C)	55°F (13°C)	0%
Maximum	110°F (32°C)	110°F (43°C)	110°F (43°C)	90%

Industry standards are for the substrate temperatures to be 5°F (3°C) above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.

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## Curing Schedule

**Drying Times:** The following chart shows typical dry to recoat times \* at various catalyst levels and temperatures for a 20 mil (500 micron) dry film. The second coat should be applied while the first coat is still tacky.

Catalyst Level	65F (18C)**	75F (24C)**	90F (32C)**	110 (43C)*
Std. 2.8 oz/gal	12 hours	4 hours	3 hours	1 hours
+50% 4.2 oz/gal	8 hours	3 hours	2 hours	30 min.
+100% 5.6 oz/gal	6 hours	2 hours	1 hours	15 min.

\* Times will vary +/- 10%

\*\* Material Temperature

If more time has elapsed after application, the surface must be wiped with xylol or other suitable aromatic solvent prior to recoating. Because the glass flake is abrasive, it is recommended that a stiff bristle scrub brush be used to solvent wipe the surface.

If solvent wiping is not practical, it is also acceptable to thoroughly sweep blast the surface prior to recoating.

Note: Failure to properly treat the surface prior to recoating will result in poor adhesion between coats.

**Final Cure:** Before placing into service:

### Surface Temp.

55F (13C)	N/R
75F (24C)	14 days
90F (32C)	7 days
130F (55C)	24 hours

Force curing is recommended for all tank linings. Final cure temperatures below 60°F (16°C) are not recommended for immersion service. Force curing at elevated temperatures increases chemical resistance to certain exposures. To force cure, cure the material at 75°F surface temperature for 4 hours, with good ventilation then elevate temperatures no more than 30°F every 30 minutes and maintain at the 130°F temperature for 24 hours. Excessive dry film thickness or poor ventilating conditions require longer dry times and in extreme cases will cause premature failure.

## Packaging, Handling, & Storage

**Storage Conditions** Carboglas 1601 SG Catalyst is a strong oxidizing agent and should be stored separately. In cases where storage temperatures are consistently above 75°F (24°C), it may be desirable to refrigerate the product to preserve its reactivity. Store and ship at temperatures below 100°F (43°C). The shelf life of Carboglas 1601 SG Part A and Additive #47 are also significantly affected by temperature. Prolonged storage at elevated temperatures will shorten the shelf life.

### Shipping Weight (Approximate)

	5 Gallon Kit
Part A:	60 lbs. (27 kg)
Catalyst:	2 lbs ( 1 kg)
Additive #47:	45 lbs (20 kg)

### Flash Point (Setaflash)

Part A:	90°F (32°C)
Catalyst:	137°F (58°C)
Additive # 47:	88°F (31°C)

### Storage (General)

Store Indoors at temperature 40-110°F (4-43°C). Humidity: 0-100

### Shelf Life

Part A: Min. 12 months at 75°F (24°C)  
Catalyst: Min. 6 months at 75°F (24°C)  
Additive #47: 6 months at 75°F (24°C)

